Ecological Reference Worksheet **MT-NRCS**

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Contact for lead author: Bozeman, MT **Reference site used? No**
Date: 04/06/2005 **MLRA:** 58AC **Ecological Site: Shallow Clay 11-14" p.z.** This *must* be verified based on soils and climate (see Ecological Site Description). Current plant community *cannot* be used to identify the ecological site.

Indicators. For each indicator, describe the potential for the site. Where possible, (1) use numbers, (2) include expected range of values for above- and below-average years for **each** community within the reference state (when appropriate), and (3) cite data. Continue descriptions on separate sheet if needed. **Weight factors** are either 0.5, 1.0 or 2.0. The default factor is 1.0. A maximum of 8 indicators may be changed to 0.5 or 2.0. The rest remain at 1.0.	**Wgt. Factor**
1. Number and extent of rills: Rills should not be evident in the reference state. Exceptions include steep slopes (>55%) following heavy thunderstorms. Rills may then be present, but will generally be less than 8 feet in length.	1.0
2. Presence of water flow patterns: Water flow patterns are generally not evident on lesser slopes, but can be apparent on steeper slopes in the reference state. When they are present, they are short (< 2 feet long) and discontinuous.	1.0
3. Number and height of erosional pedestals or terracettes: Both may be evident in the reference state, especially on steeper slopes (>45%). If present, they do not exceed 1.5 inches in height.	1.0
4. Bare ground from Ecological Site Description or other studies (rock, litter, lichen, moss, plant canopy are *not* bare ground): Bare ground is less than 30% in the reference state. In HCPC, bare ground should not exceed 18%.	1.0
5. Number of gullies and erosion associated with gullies: Gully erosion is not evident in the reference state.	1.0
6. Extent of wind scoured, blowouts and/or depositional areas: These are not evident in the reference state.	1.0
7. Amount of litter movement (describe size and distance expected to travel): Litter movement varies by size and depth of litter. In the reference state, litter should be coarse perennial grass leaves, anywhere from 1.5 inches up to 3 inches in length, plus small shrub leaves. Litter will not move more than a couple of inches from where it originated.	1.0
8. Soil surface (top few mm) resistance to erosion (stability values are averages – most sites will show a range of values for both plant canopy and interspaces, if different): Stability values of 4-5 in plant interspaces. Stability values of 5-6 under plant canopies and at plant bases.	1.0
9. Soil surface structure and SOM content (include type and strength of structure, and A-horizon color and thickness for both plant canopy and interspaces, if different): Granular surface structure of 1 to 3 inches in depth; brown color. Organic matter approx 1-3%.	1.0
10. Effect of plant community composition (relative proportion of different functional groups) & spatial distribution on infiltration & runoff: Deep-rooted native perennial grasses optimize infiltration and runoff. Perennial plants (grasses, forbs and shrubs) should be spaced approx 2 to 3 feet apart in the reference state.	1.0
11. Presence and thickness of compaction layer (usually none; describe soil profile features which may be mistaken for compaction on this site): No compaction layer present in reference state.	1.0
12. Functional/Structural Groups (list in order of descending dominance by above-ground weight using symbols: >>, >, = to indicate much greater than, greater than, and equal to): Mid-height, native perennial bunchgrasses >> shrubs >= native perennial and annual forbs.	1.0
13. Amount of plant mortality and decadence (include which functional groups are expected to show mortality or decadence): Plant mortality of deep-rooted perennial bunchgrases is very low; mortality of shrubs is very low. Decadence during periods of prolonged drought will be evident on all plant species.	1.0
14. Average percent litter cover (40-60%) and depth (0.1 to 1.5 inches).	1.0
15. Expected annual production (this is TOTAL above-ground production, not just forage production): 900 – 1200 #/acre.	1.0
16. Potential invasive (including noxious) species (native and non-native). List species which characterize degraded states and which, after a threshold is crossed, "will continue to increase regardless of the management of the site" and may eventually dominate the site: plains pricklypear, broom snakeweed, cheatgrass, Japanese brome, curlycup gumweed, Wyoming big sagebrush, fringed sagewort, blue grama.	1.0
17. Perennial plant reproductive capability: This is not impaired in the reference state.	1.0